

DETAILED ACTION

The following correspondence is a first office action on the merits. Claims 1-14 as originally filed are currently pending and have been considered below.

Specification

1. The disclosure is objected to because of the following informalities:

The specification recites a reference to a particular claim on Pg. 1, Ln. 1-2. It is improper to reference a claim in the specification. This reference to the claim should be replaced with a statement containing the information intended to be referenced by using the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat.

App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance:

Claim 1 recites the broad recitation "an assembly to be driven", and the claim also recites "in particular an air conditioning compressor of a motor vehicle" which is the narrower statement of the range/limitation.

Claim 10 recites the broad recitation "an angle that is less than 90 degrees", and the claim also recites "is preferably approximately 30 degrees" which is the narrower statement of the range/limitation.

5. Claim 13 recites the claim limitation "at an axial distance from axially adjacent parts of the pulley". The claim is indefinite as it is unclear as to what the applicant is attempting to claim since it is unclear what "parts of the pulley" are referencing. It is also unclear as to if the applicant is claiming an axial distance between two parts of the pulley that are adjacent or an axial distance between the hub and parts of the pulley.

6. Claim 13 recites the claim limitation "the form-fit engagement". This claim is indefinite as a "form-fit engagement" has not been identified and is unclear as to if the applicant is attempting to claim the engagement between the inner toothings of the pulley

and the outer toothing of the vibration-damping element if the applicant is attempting to claim a different "form-fit engagement".

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-8, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwabuchi et al. (US 5,564,981).

As per claim 1, Iwabuchi et al. discloses a device (Fig. 1, Fig. 2) for transmitting torque from a pulley (6 with rim 7 for engaging a belt) to a hub (11) of an assembly to be driven (capable of being used to transmit torque to drive an accessory), with at least one vibration-damping element (10) located between the pulley and the hub (Fig. 1, Fig. 2), wherein the vibration-damping element (10) is rigidly connected at its inner circumference with the hub 11) and is engaged at its outer circumference with the pulley (6, Col. 3, Ln. 4-7, Ln. 44-48, Ln. 60-68, the vibration-damping element engages with pulley 6 through recesses 10C for receiving arms 9 of pulley 6, the vibrating-damping element has recesses 10D allowing it to be rigidly connected to hub 11 through projections 11A).

As per claim 2, Iwabuchi et al. also discloses the vibration-damping element (10) is composed of an elastomer material (Col. 4, Ln. 25-33).

As per claim 3, Iwabuchi et al. also discloses that is well known in the art to vulcanize the vibration-damping element is vulcanized to the hub (Col. 1, Ln. 36-42).

As per claim 4, Iwabuchi et al. also discloses that during assembly, it is possible to engage the hub (11), with the vibration-damping element (10), and the pulley (6) using an axial relative motion (Col. 4, Ln. 34-43, Fig. 2, the device is assembled by sliding the pieces together axially in an order shown in Fig. 2).

As per claim 5, Iwabuchi et al. also discloses the vibration-damping element (10) is detachably engaged with the pulley (6, since the device is assembled by fitting the pieces together and there is no chemical bonding between vibration-damping element 10 and pulley 6, the two are detachably engaged).

As per claim 6, Iwabuchi et al. also discloses the pulley (6) is composed of a plastic material (Col. 4, Ln. 10-11).

As per claim 7, Iwabuchi et al. also discloses the vibration-damping element (10) is designed essentially annular in shape (Fig. 2, the vibration-damping element 10 is essentially an annular shape with recess provided therein).

As per claim 8, Iwabuchi et al. also discloses the vibration-damping element (10) has an outer toothing (10B) that is engaged with an inner toothing (9) on the pulley (6, Col. 3, Ln. 1-6).

As per claim 11, Iwabuchi et al. also discloses a tooth height of teeth of the inner toothing (9) of the pulley is greater in every operating state than the tooth height of teeth

of the outer toothing (10B) of the vibration-damping element (in order for the vibration-damping element 10 to fit into an engagement and to function properly with pulley 6, the height of the outer teeth 10B of the vibration-damping element must be smaller than the height of the inner teeth 9 of the pulley 6).

As per claim 12, Iwabuchi et al. also discloses a tooth width of teeth (9) of the inner toothing of the pulley (6) is less than a tooth width of teeth (10B) of the outer toothing of the vibration-damping element (10, Fig. 2, the tooth width of the teeth 10B is the width between engaging recesses for teeth 9 of the pulley 6).

As per claim 13, as best understood by the examiner, Iwabuchi et al. also discloses the vibration-damping element (10) is located in the region between the hub (11) and a region of the pulley (6) having an inner tooth engagement with the outer tooth of the vibration-damping element (10), and having an axial distance between said vibration-damping element (10) and said region of the pulley (6, Fig. 2).

9. Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Kamdem et al. (US 7,244,185 B2).

As per claim 1, Kamdem et al. discloses a device (Fig. 4b) for transmitting torque from a pulley (4) to a hub (3) of an assembly to be driven (Col. 1, Ln. 7-11), with at least one vibration-damping element (2) located between the pulley and the hub (Fig. 3), wherein the vibration-damping element is rigidly connected at its inner circumference with the hub (Col. 4, Ln. 46-51) and is engaged at its outer circumference with the pulley (Col. 4, Ln. 51-54).

As per claim 9, Kamdem et al. also discloses the vibration-damping element (2) having projections (20e, 20i) and the rim of the pulley (4) having projections (41) for engaging the recesses (22e) of the vibration-damping element (2) between adjacent projections (20e, 20i), having zero radial play between the engagement (Col. 4, Ln. 63-67).

As per claim 10, Kamdem et al. also discloses the vibration-damping element (2) having projections (20e, 20i) with side flanks (22b) having a flared angle to form an hourglass shape (Fig. 2b, Col. 4, Ln. 11-17).

10. Claims 1 and 14 is rejected under 35 U.S.C. 102(e) as being anticipated by Tabuchi et al. (US 2002/0132673 A1).

As per claim 1, Tabuchi et al. discloses a device (10) for transmitting torque from a pulley (11) to a hub (19, 20) of an assembly to be driven (Col. 3, Ln. 22-25), with at least one vibration-damping element (21) located between the pulley and the hub (Fig. 1, Col. 5, Ln. 30-35), wherein the vibration-damping element is rigidly connected at its inner circumference with the hub (Col. 4, Ln. 53-57) and is engaged at its outer circumference with the pulley (Col. 5, Ln. 25-29).

Tabuchi et al. also discloses an overload safeguard comprising of an inner hub (132) having a plurality of bridging parts (132c) which are set to be broken when the torque exceeds a predetermined value ([0024]).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwabuchi et al. in view of Kamdem et al. (US 7,244,185 B2).

As per claim 9, Iwabuchi et al. discloses the all elements of the claimed invention but fails to explicitly disclose the teeth of the inner toothed ring of the pulley and the teeth of the outer toothed ring of the vibration-damping element have tooth flanks that bear against each other without play.

Kamdem et al. discloses a decoupling element with a decoupling ring (2) having projections (20e, 20i) and the rim of the pulley (4) having projections (41) for engaging the recesses (22e) of the decoupling ring (2) between adjacent projections (20e, 20i), having zero radial play between the engagement (Col. 4, Ln. 63-67).

It would have been obvious to one of ordinary skill in the art to modify the device of Iwabuchi et al. to include the teeth of the inner toothing of the pulley and the teeth of the outer toothing of the vibration-damping element have tooth flanks that bear against each other without play, as taught by Kamdem et al. for the purpose of enhancing work in shear (Col. 4, Ln. 18-28).

As per claim 10, Iwabuchi et al. discloses all elements of the claimed invention but fails to explicitly disclose diametrically opposed tooth flanks of adjacent teeth in the inner toothing of the pulley and opposed tooth flanks of teeth in the outer toothing of the vibration-damping element form an angle that is less than 90 degrees.

Kamdem et al. discloses a decoupling element with a decoupling ring (2) having projections (20e, 20i) with side flanks (22b) having a flared angle to form an hourglass shape (Fig. 2b, Col. 4, Ln. 11-17).

It would have been obvious to one of ordinary skill in the art to modify the device of Iwabuchi et al. to include diametrically opposed tooth flanks of adjacent teeth in the inner toothing of the pulley and opposed tooth flanks of teeth in the outer toothing of the vibration-damping element form an angle that is less than 90 degrees, as taught by Kamdem et al. for the purpose of enhancing work in shear (Col. 4, Ln. 18-28).

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwabuchi et al. in view of Tabuchi et al. (US 2003/0132673 A1).

As per claim 14, Iwabuchi et al. discloses all elements of the claimed invention but fails to explicitly disclose the hub includes an overload safeguard.

Tabuchi et al. discloses a pulley (110) having an inner hub (132) having a plurality of bridging parts (132c) which are set to be broken when the torque exceeds a predetermined value ([0024]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Iwabuchi et al. to include an overload safeguard, as taught by Tabuchi et al., for the purpose of protecting expensive auxiliaries of a system from receiving too much torque.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA MOMPEN whose telephone number is (571)270-5788. The examiner can normally be reached on M-F 6:00-3:30 (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bradley T King/
Primary Examiner, Art Unit 3657

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